IN THE SPECIFICATION:

Please amend the title as follows:

AUXILIARY SUPPORTING UNIT, BOARDING BRIDGE WITH THE SAME AND ~~CONTROL~~ METHOD FOR IMPROVING STABILITY OF THE BOARDING BRIDGE BY USING THE SAME

Please replace the paragraph beginning on page 1, line 5 with the following:

The present invention relates to an auxiliary supporting unit used for a passenger boarding bridge, it also relates to a boarding bridge with the same and method for ~~controlling~~ improving the boarding bridge, particularly to an adjustable auxiliary supporting unit, a boarding bridge with improved stability and reliability as well as a ~~control~~ method for improving stability of the boarding bridge.

Please replace the paragraph beginning on page 1, line 12 with the following:

The passenger boarding bridge as a kind of equipments used in airport is very popular due to its convenience and security. The boarding bridge assists the passenger to go aboard an airplane directly from a terminal building. At present, many kinds of passenger boarding bridges are disclosed, such as in Chinese patent No. ZL95226673.3, ZL00258374.7 and American patent No. US5855035. Conventionally, there are two manners for supporting a beam of boarding bridge, which is respectively named a single-point supporting and a double-point supporting.

With reference to Fig. 1, a passenger boarding bridge 100 in so-called single-point supporting manner is disclosed in Chinese Patent ZL00258374.7, which comprises a rotunda 103 connected to a terminal (not shown), a tunnel 101 which can be retracted or extended to change its length, elevation system 105 used for adjusting the height of the tunnel 101, a wheel mechanism 102 for supporting the tunnel 101 through the elevation system 105 etc. The wheel mechanism 102 is provided with two wheels attached respectively to both ends of a beam. A bearing plate is substantially located in the center of the beam and used for supporting the elevation system 105. However, the bridge 100 according to the manner of supporting has poor stability, as the tunnel 101 are often wobbling when it carries the passengers or when the wheel mechanism 102 is driven to move or turn around the bearing plate.

Chinese patent ZL95226673.3, as shown in Fig. 2, discloses another bridge 200 with a wheel mechanism 201 for supporting an elevation system 203 which can adjust or control a tunnel 202 to change its height. Now particularly referring to Fig. 2 and Fig. 3, ~~specially,~~ two sets of wheel ~~assembly~~assemblies 204 are attached to both ends of a beam 301 to improve the stability of the bridge 200, each set of which further comprises a revolving base 302 used for supporting, a hinge support 303 and a hinge shaft 304, and two wheels 305. Importantly, for this kind of bridge 200 in so-called double-supporting manner, a synchronous steering mechanism 307 is necessary in order to drive the wheel assembly 204 at two ends of the beam 301 to move and rotate, or a control system is alternatively utilized to drive the wheel 305 in order to accomplish synchronous moving and/or rotation of the wheel 305.

In fact, the conventional boarding bridge 200 according to the double-supporting manner is more stable than before, while it has a complex structure and a low safety, and the control system for synchronous operation of the wheels are even more complicated and expensive. Furthermore, the reliability of the bridge is deduced accordingly as it is unavoidable for the control system to break down.

Please replace the paragraph beginning on page 3, line 3 with the following:

The above object of the present invention is realized by providing an auxiliary supporting unit, comprising a leg support which can be driven to extend and retract; and a foot portion attached to one end of the leg support, wherein the foot portion can be supported on the ground when the leg support is extended and can leave the ground when the leg support is retracted. ~~mounted under two ends of the beam, comprising a leg support the and a foot portion, a first end of the leg support being connected to the beam and a second end of the leg support being connected to the foot portion, whereby the foot portion of the auxiliary supporting unit is movable on or slightly above the ground to provide an auxiliary support to the beam and the boarding bridge thereon.~~

Please replace the paragraph beginning on page 4, line 1 with the following:

Another object of the present invention is realized by providing a boarding bridge comprising a tunnel ~~disposed above a beam, the first end of the tunnel~~

~~being connected to a boarding gate of an airport and the second end of the tunnel being connected to an exit of an airplane; an elevator system provided at the another end of the tunnel being connected to the exit of the airplane; a wheel mechanism provided with a beam, a supporting unit composed of a revolving base, a hinge support and a hinge shaft being provided thereon, wheels, attached to the supporting unit and rotating relative to the revolving base; a control system, for controlling the moving direction of the wheels and the lifting of the elevator system; wherein the boarding bridge further comprising an auxiliary supporting unit, defined under two ends of the beam and provided with a leg support and a foot portion, the first end of the leg support being connected with the beam and the second end of the leg support being connected with the foot portion, the foot portion being movable on or slightly above the ground to provide an auxiliary support to the beam and the boarding bridge thereon~~ for carrying the passenger; an elevation system for changing the height of the tunnel; a wheel mechanism for driving the tunnel to extend or extract, provided with a beam for supporting the elevation system; and wheels, attached to the beam through a bearing assembly; and an auxiliary supporting unit provided with a leg support attached under ends of the beam and defined outside the wheels, wherein the leg support can be driven to extend and retract; and a foot portion attached to one end of the leg support. The foot portion can be supported on the ground when the leg support being extended and can leave the ground when the leg support being retracted.

Please replace the paragraph beginning on page 5, line 12 with the following:

Another object of the present invention is realized by providing a method for ~~controlling~~ improving the stability of a boarding bridge, ~~comprising steps of:~~ wherein the boarding bridge is provided with a tunnel for carrying the passengers; an elevation system for changing the height of the tunnel; a wheel mechanism for driving the tunnel to extend or retract, provided with a beam for supporting the elevation system; and wheels, attached to the beam through a bearing assembly, wherein the method comprises providing a leg support which can be driven to extend and retract, attached under both ends of the beam and defined outside of the wheels; and providing a foot portion attached to one end of the leg support, wherein the foot portion can be supported on the ground when the leg support is extended and can leave the ground when the leg support is retracted; providing an angle detector coupled to the bearing assembly for obtaining signals in relation with the direction and an angle at which the wheel mechanism is turned; extending the leg support to drive the foot portion to be supported on the ground when the detected angle is larger than a first predetermined value; retracting the leg support when the detected angle is smaller than a second predetermined value.

In the above-mentioned method, the first predetermined value is larger than the second predetermined value.

In the above-mentioned method, further comprising the step of defining the leg support into an inactive status when the bridge moves into the area where an angle the wheel mechanism turned is larger than the second predetermined angle but smaller than

the first predetermined angle in order to avoid the leg support from being extended or being retracted frequently.

In the above-mentioned method, the foot portion is configured into a universal wheel.

In the above-mentioned method, further comprising the steps of

providing a buffer between the foot portion and the leg support; and

extending the leg support until the foot portion is supported on the ground with a predetermined pressure so as to balance torsion force of the boarding bridge when the boarding bridge is moving.

In the above-mentioned method, the foot portion is configured into a supporting seat in hinge joint with the leg support.

In the above-mentioned method, further comprising the step of providing a power-driven mechanism in order to drive the leg support to extend or retract.

In the above-mentioned method, further comprising the step of providing a manual mechanism to drive the leg support to extend or retract.

~~1) providing a wheel mechanism, which has a beam on which a supporting unit including a revolving base, a hinge support and a hinge shaft is provided; and wheels attached to the supporting unit and rotating relative to the revolving base, used for driving the boarding bridge;~~

~~2) providing a tunnel disposed on the beam, for connecting a boarding gate with an exit of an airplane;~~

~~3) providing an elevation system for lifting the tunnel to connect with the exit of the airplane;~~

~~4) providing a control system for controlling the moving direction of the wheel mechanism and the lifting of the elevation system; and~~

~~5) providing an auxiliary supporting unit, mounted under two ends of the beam, the auxiliary supporting unit comprising a leg support and a foot portion, a first end of the leg support being connected to the beam and a second end of the leg support being connected to the foot portion; whereby the foot portion of the auxiliary supporting unit is movable on or slightly above the ground to provide an auxiliary support to the boarding bridge by adjusting the leg support under the control of the control system so as to balance torsion forces of the boarding bridge when the boarding bridge is moving.~~

~~In the above-mentioned method, the foot portion of the auxiliary supporting unit is a universal wheel.~~

~~In the above-mentioned method, a buffer is further provided between the leg support and the universal wheel, whereby the foot portion of the auxiliary supporting unit is supported on the ground to provide an auxiliary support to the boarding bridge by the buffer so as to balance torsion forces of the boarding bridge when the boarding bridge is moving.~~

~~In the above-mentioned method, the leg support of the auxiliary supporting unit is a power-driven thruster, and the foot portion is a supporting seat, whereby when the boarding bridge moves to connect with the boarding gate of the airplane, the supporting seat is driven by the power-driven thruster to extend to support on the ground in a given pressure, so as to provide an auxiliary support to the boarding bridge, and when the boarding bridge needs to move again, the supporting seat is retracted by the power-driven thruster under the control of the control system to the original status.~~

~~In the above-mentioned method, the leg support is a power-driven thruster and the foot portion is a universal wheel, whereby the universal wheel driven by the power-driven thruster extends to be supported on the ground under the controlling of the control system in a given pressure, so as to balance torsion forces of the boarding bridge during the moving of the boarding bridge and make the boarding bridge stable.~~

~~In the above-mentioned method, an angle detector is provided on the beam to measure an angle of the wheels relative to a longitudinal axis of the boarding bridge and send the detected angle signal to the control system of the boarding bridge, whereby the leg support is driven to extend or retract by the power-driven thruster in a given pressure under the controlling of the control system in response to the detected angle signal.~~

~~In the above-mentioned method, when the detected angle is lager than a first predetermined value α, the foot portion is driven by the power-driven thruster under the controlling of the control system of the boarding bridge to extend out to be supported on the ground in a given pressure so as to increase the stability of the boarding bridge; when the detected angel is smaller than a second predetermined value β, the foot portion is driven by the power-driven thruster to retract to its original status; and when the detected angle is larger than the second predetermined value β and smaller than the first predetermined value α, the power-driven thruster is idle under the control of the control system of the boarding bridge.~~

~~In the above-mentioned method, the first predetermined value α is larger than the second predetermined value β.~~

Please replace the paragraph beginning on page 8, line 20 with the following:

Referring to Fig. 4, a wheel mechanism 10 according to the first embodiment of the present invention used for passenger boarding bridge (not shown) comprises a beam 2, on which an elevator system 12 for adjusting a tunnel of the bridge (not shown) is provided; a wheel assembly 1 coupled with a bearing assembly 21 to further support the beam 2, being driven by a control system and allowing the bridge 10 to be driven up to the airplane, and auxiliary supporting units 20 which are further attached to both ends of the beam 2 in order to provide auxiliary support to the beam 2 and the tunnel through the elevation system 12.

Please replace the paragraph beginning on page 9, line 3 with the following:

The auxiliary supporting unit 20 of the present invention includes a leg support mounted to the beam and foot portion attached thereon. The leg support can be adjusted to retract or extend under a predetermined condition.

Please replace the paragraph beginning on page 9, line 19 with the following:

Fig. 4 is a schematic view of a first preferred embodiment of the auxiliary supporting unit in accordance with the present invention. The wheel mechanism 1 is provided on a center of the beam 2 through the bearing assembly 21. A pair of the auxiliary supporting units 20 are defined outside the wheel mechanism 1 and

respectively mounted under both ends of the beam 2 in order to support the beam 2. Each unit 20 comprises a leg support 23 attached under the beam 2 and a foot portion 25. The leg support 23 can be driven by the control system to retract and extend, whereas the foot portion 25 may leave the ground under a predetermined condition while retracting the leg support 23 and may be alternately supported on the ground while extending the leg support 23. As the foot portion 25 may be stepped on the ground, the foot portion 25 according to the preferred embodiment of the invention shall be configured into universal wheels.

Please replace the paragraph beginning on page 10, line 6 with the following:

Preferably, the auxiliary supporting unit 20 is configured to keep a gap between the ground and the universal wheel (foot portion) 25. The universal wheel (foot portion) 25 will depend on the ground and support the boarding bridge through the beam and prevent the boarding bridge from wobbling or slanting when a slight tilting occurs during the moving of the boarding bridge or carrying the passengers.